

Application No.: 10/045,325
Amendment Dated: February 13, 2004
Reply to Office Action of: November 14, 2003

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Remarks/Arguments:

The pending claims are 1-16. Claims 1, 4-6 and 13-16 have been amended. No new matter is introduced therein.

Claims 1, 7, and 8 have been rejected under 35 U.S.C. § 103(a) as unpatentable over Applicants' disclosed Prior Art in view of Toda et al. (U.S. Patent No. 5,712,540) and Ciaccio (U.S. Patent No. 5,594,199). Amended claim 1 recites, in part:

the input terminals and the smoothing capacitor are connected to each other in the case, the connection extending one set of wires outside the case for coupling to the dc power supply.

These features are shown in Figure 1 of the application. Reference number 1 is a dc power supply. Reference number 7 is a case. Drive-motor driving device 4, compressor-driving device 5, and smoothing capacitor 3 are inside case 7. Devices 4 and 5 share capacitor 3. (page 7, lines 1-4; 24-27). Referring to Figures 1 and 3, two terminals are on top of capacitor 3; drive-motor driving device 4 has a positive terminal and a negative terminal; compressor-driving device 5 has a positive terminal and a negative terminal. Figure 1 shows the two positive terminals being coupled together at one of the terminals of capacitor 3 and the two negative terminals being coupled together at the other terminal of capacitor 3. The positive and negative terminals of element 4 are its input terminals. Figures 1 and 3 also show the connection of elements 3 and 4 being coupled to battery 1. As shown in Figure 1, only one set of wires extends outside the case 7 for coupling element 3 and the input terminals of element 4 to the dc power supply.

Page 3 of the Office Action contends that Toda discloses a capacitor that is coupled to two different motor driving devices. However, neither reference discloses or suggests "the connection extending one set of wires outside the case for coupling to the dc power supply" as now recited in amended claim 1.

The use of one set of wires provides an advantage to applicants' device. In conventional devices, there are a number of connections to the power supply, sometimes resulting in a reversal connection on the way to the power supply. However, when one set of wires extends outside the case, one connection to the power supply is used. This structure can prevent the reversal connection. (page 7, lines 22-28). Consequently,

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protective diode 63 for reversal protection in the prior art (see Figure 26) is no longer required, so that downsizing and energy-saving can be expected. (page 7, lines 31-32).

Amended claim 1 also recites, in part,

wherein said smoothing capacitor, which is disposed outside said dc power supply, is coupled to respective input terminals of said drive-motor driving device and said compressor-driving device

The apparatus in Toda uses a converter circuit 2 to convert commercial AC power 1 (col. 1, lines, 37-39, 63) to DC power. (col. 1, line 39). Smoothing capacitor 2e (col. 2, line 15) is inside converter 2. (See, Figs. 1, 4, 10) In fact, a purpose of the Toda apparatus is to convert AC power to DC power. (col. 4, lines 38-39). In contrast, applicants' device uses a source of DC power 1, does not need a converter to convert AC power to DC power, and therefore does not place their smoothing capacitor 3 inside the DC power supply. Instead, the capacitor is placed outside the DC power supply 1 as recited in amended claim 1. Although page 3 of the Office Action contends that Ciaccio discloses a smoothing capacitor which is impliedly inside the case, applicants respectfully contend that Ciaccio nowhere discloses or suggests the presence of a capacitor inside its device. Therefore, it would not have been obvious in view of Toda and Ciaccio to substitute a DC power source for the AC power source in Toda and to place the Toda smoothing capacitor outside the substituted DC power source.

Amended claim 1 also recites:

a location of said compressor-driving device relative to a location of said smoothing capacitor limits a surge voltage generated by current which flows in wires extending from said smoothing capacitor to said compressor-driving device.

Applicants' disclosure states:

Since compressor-driving device 5 is smaller than the conventional one, device 5 can be placed closer to electrolytic capacitor 3. The power-lead wires thus can be shorter, and the smaller inductance can be expected. As a result, a smaller surge voltage than conventional one shown in Fig. 29C can be expected, so that the circuit of compressor-driving device 5 is prevented from being damaged. (page 8, lines 7-12).

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None of the cited references disclose or suggest that smaller surge voltage in wires extending from the smoothing capacitor to the compressor-driving device can be obtained by placing them closer together. Therefore, it would not have been obvious to locate the smoothing capacitor and the compressor-driving device relative to each other in a way that limits a surge voltage along wires extending from the smoothing capacitor to the compressor-driving device.

For all of the above reasons, amended claim 1 is not subject to rejection under 35 U.S.C. § 103(a) as unpatentable over Applicants' disclosed prior art, Toda and Ciaccio. Furthermore, since claims 7 and 8 depend from amended claim 1, they are also not subject to the same rejection for at least the same reasons that amended claim 1 is not subject to rejection.

Claim 2 has been rejected under 35 U.S.C. § 103(a) as unpatentable over Applicants' disclosed prior art, Toda et al. and Ciaccio and further in view of Betsusou et al. (JP 64-031380). The rejection is traversed. To establish a prima facie case of obviousness, the prior art references when combined must teach or suggest all the claim limitations. As shown above, the combination of Applicants' disclosed prior art, Toda, and Ciaccio do not disclose or suggest all of the features recited in amended claim 1. Betsusou also fails to teach or suggest all the features recited in amended claim 1; specifically, Betsusou at least fails to teach or suggest the features discussed above. Therefore, a combination of all four references fails to teach or suggest all the features recited in amended claim 1 and amended claim 1 is not subject to rejection under 35 U.S.C. § 103(a) unpatentable over Applicants' disclosed prior art, Toda et al. and Ciaccio and further in view of Betsusou et al. Since claim 2 depends from amended claim 1, it is also not subject to rejection under 35 U.S.C. § 103(a) unpatentable over Applicants' disclosed prior art, Toda et al. and Ciaccio and further in view of Betsusou et al.

In addition, claim 2 has been rejected over a combination of four references. The Office action has relied upon hindsight to arrive at the determination of obviousness. It is impermissible to use the claimed invention as an instruction manual or template to piece together the teachings of the prior so that the claimed invention is rendered obvious. The PTO cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention. It is impermissible to pick and choose from any one reference only so much of it as will support a given position, to the exclusion of

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other parts necessary to the full appreciate of what such reference fairly suggests to one of ordinary skill in the art. For these additional reasons, claim 2 is not subject to rejection under 35 U.S.C. § 103(a) unpatentable over Applicants' disclosed prior art, Toda et al. and Ciaccio and further in view of Betsusou et al.

Claims 3-16 have all been rejected under 35 U.S.C. § 103. The prior art cited against these claims are Applicants' disclosed prior art, Toda, Ciaccio, Makaran (U.S. Patent No. 5,744,921), Wagner (U.S. Patent No. 6,207,900), Tsukamoto et al. (U.S. Patent No. 6,476,329), Pieronek et al. (U.S. Patent No. 5,452,201), Watson (U.S. Patent No. 6,414,455), Betsusou and Goto (U.S. Patent No. 5,714,806).

Applicants incorporate by reference the arguments made above which explain why the combination of Applicants' disclosed prior art, Toda, and Ciaccio do not support rejections of these claims. None of the other references support the rejections of claims 3-16 either. Applicants also incorporate by reference the hindsight arguments made above.

Based on the above arguments, none of the claims are subject to rejection as unpatentable under 35 U.S.C. § 103(a).

Applicants therefore respectfully solicit allowance of the entire application.

Respectfully submitted,


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Dated: February 16, 2004

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